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(□ □ □ □ □ □ 1v24□ 24□ □ □ 1v211)

□ Versi on 1.0□

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## 目 录

第 1 章 端口与 VLAN	3
1.1 802.1Q VLAN	8
1.2 VLAN 的基本概念	13
1.3 VLAN 的划分	19
1.4 VLAN 的互通	22
1.5 STP 的基本概念	24
1.6 TRUNK 的基本概念	27
1.7 MIRROR 的基本概念	29
第 2 章 CONFIGURATION 的基本概念	31
第 3 章 IMAGE 的基本概念	33
第 4 章 SNMP 的基本概念	35
第 5 章 MAC 的基本概念	38
第 6 章 IP 的基本概念	39
第 7 章 ACL 的基本概念	41
第 8 章 802.1X 的基本概念	49
第 9 章 1 的基本概念	52
第 10 章 2 的基本概念	54



```
Switch(vlan-3)#vlan2    //   vlan2   00 00 00 00 00 00   00  vlan2  00  
                        00  vlan2  00 00 00
```

```
// 000 1/1 0 1/3 00 vlan200 0000000000000000 vlan200 0000000000000000
2 00000 untag x 0 x0000000000 1/1 0000000000000000 1/3 0000000000000000
000000000
```

```
Switch(vlan 3) # untag 1/2 1/4 // 1/2 1/4 vlan 3
vlan 3 vlan 3 untag x x
```

2.2 4504 24T 4504 24TX

```
Switch# slot 2 // 24
slot 2 // 3
Switch(slot-2)# config // config 24
Slot 2 >
Slot 2 > enable // enable 24
password: //
Slot 2 # //
```

Slot 2 (vlan-2) # un 1 3 // 24 1 3 vlan2 24 4G

Slot 2 (vl an-3) # un 2 4 // 24 2 4 vl an3

424 van 4

```

1 3  vlan2 2,4  vlan3 24
1,3  vlan2 2,4  vlan3  vlan
vlan

```

### 3.

VLAN PC VLAN  
 PC VLAN PC

#### 3.1 4GT 4

1 VLAN

```
Switch# show vlan
```

```

-----
| MD | Name | Status |
|----+-----+-----|
| 1 | Default VLAN 1 | Static |
|----+-----+-----|
| 2 | vlan2 | Static |
|----+-----+-----|
| 3 | vlan3 | Static |
|----+-----+-----|
//  vlan 2  vlan 3

```

2 VLAN " U

```
Switch# show vlan 2 //  vlan 2
```

Vlan 2 Port Mp

(- =None, M=Tagged, U=Untagged)

```
|-----|
| module |      1      |      2      |      3      | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| port   | U | - | U | - | - | - | - | - | - | - | - |
|-----|-----|-----|
```

```
// 配置 vlan 2 的端口 1/1 和 1/3 为 U 型端口
配置 vlan 2 的端口 1/1 和 1/3 为 U 型端口
```

Switch# show vlan 3

Vlan 3 Port Map

(- =None, M=Tagged, U=Untagged)

```
|-----|
| module |      1      |      2      |      3      | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| port   | - | U | U | - | - | - | - | - | - | - |
|-----|-----|-----|
```

```
// 配置 vlan 3 的端口 1/2 和 1/4 为 U 型端口
配置 vlan 3 的端口 1/2 和 1/4 为 U 型端口
```

### 3.2 配置 24 端口交换机

#### 1) 配置 VLAN

```
Switch# slot 2 //配置 24 端口交换机 24 端口交换机
配置 slot 2 的端口 2 和 3
配置 3
```

```
Switch(slot-2)# config //配置 config 24 端口交换机
```

Slot 2 >

Slot 2 > enable //配置 enable 24 端口交换机

password: //配置 password 24 端口交换机

// □ □ □ □ □ □ □ □ □ □

```
//vlan
```

```
| Vlan | Name | Status |
|-----+-----+-----|
| 1 | Default VLAN 1 | Static |
|-----+-----+-----|
| 2 | vl an2 | Static |
|-----+-----+-----|
| 3 | vl an3 | Static |
|-----+-----+-----|
```

[illegible]

2)  VLAN  "U"

Slot 2 # show vl an 2

Man 2 Port Map

(- =None, M=Tagged, U=Untagged)

[illegible]

```
// 2019 年 2 月 13 日 “U” 的 ASCII 码
000000000000000000000000000000000000
```

Slot 2 # show vl an 3

Man 3 Port Map

(- =None, M=Tagged, U=Untagged)





□ □	□ □ VLAN	□ □ □ □	□ □ □ □ □	□ □ □ □
□ □ 1	vl an2	2	□ □ □ 1	4
□ □ 2	vl an3	3	□ □ □ 1	4
□ □ 3	Vl an2	2	□ □ □ 2	4
□ □ 4	Vl an3	3	□ □ □ 2	4

## 2. □ □ □ □

2.1 □ □ 4 □ □ □ □ □ □ □ □ 4 □ □ □ □ □ □ □ □ □ □ □ □ □ □

□ □ □ 1 □ □ □ □

Switch# vl an 2 //□ □ vl an 2

Switch(vl an-2) # untagged 1/2 //□ □ □ 1/2 □ □ vl an2 □ □ □ □ □ □ □ □ untagged □

Switch(vl an-2) # tagged 1/4 //□ □ □ 1/4 □ □ □ tagged □

Switch(vl an-2) # vl an 3 //□ □ vl an 3

Vl an 3 added

Switch(vl an-3) # untagged 1/3 //□ □ □ 1/3 □ □ vl an3 □ □ □ □ □ □ □ □ untagged □

Switch(vl an-3) # tagged 1/4 //□ □ □ 1/4 □ □ □ tagged □

Switch(vl an-3) # exit //□ □ □ □

□ □ □ 2 □ □ □ □ □ □ □ □ 1 □ □ □ □ □ □ □ □

2.2 □ □ 24 □ □ □ □ □ □ □ □ 24 □ □ □ □ □ □ □ □ □ □ □ □ □ □

□ □ □ 1 □ □ □ □

Switch# sl ot 2 //□ □ 24 □ □ □ □ □ □ □ □ □ □ 24 □ □ □ □ □ □ □ □ □ □ □ □ □ □

□ □ sl ot □ □ □ □ □ □ □ □ 2 □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ 3 □

Switch(sl ot-2) # config //□ □ config □ □ 24 □ □ □ □ □ □ □ □

Sl ot 2 >

Sl ot 2 > enable //□ □ enable □ □ 24 □ □ □ □ □ □ □ □ □ □

password: //□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □

```
Slot 2 # // 
```

```
Slot 2 #vlan 2 // 
```

```
Vlan 2 added
```

```
Slot 2 (vlan-2)#un 2 // 2 vlan2 2 untagged
```

```
Slot 2 (vlan-2)#ta 4 // 4 tagged
```

```
Slot 2 (vlan-2)#vlan 3 // 
```

```
Vlan 3 added
```

```
Slot 2 (vlan-3)#un 3 // 2 vlan2 2 untagged
```

```
Slot 2 (vlan-3)#ta 4 // 4 tagged
```

```
 2 1
```

### 3.

```
  vlan  pc 
```

```
  pc " u" vlan 
```

```
  4  vlan  vlan 
```

```
  " M 
```

#### 3.1 4

```
  1 
```

```
Switch# showvlan
```

-----		
VID	Name	Status
----+-----+-----		
1	Default VLAN1	Static
----+-----+-----		
2	vlan2	Static
----+-----+-----		
3	vlan3	Static

[illegible]

### 3.2 24 24

#### 2) VLAN

```
Switch# slot 2 // 24 24
slot 2 2
3
```

```
Switch(slot-2)# config // config 24
```

```
Slot 2 >
```

```
Slot 2 > enable // enable 24
```

```
password: //
```

```
Slot 2 # //
```

```
Slot 2 # showvlan // vlan
```

```
-----
| V D | Name | Status |
|----+-----+-----|
| 1 | Default VLAN 1 | Static |
|----+-----+-----|
| 2 | vlan2 | Static |
|----+-----+-----|
| 3 | vlan3 | Static |
|----+-----+-----|
```

```
// vlan 2 vlan 3
```

#### 2) VLAN " U"

```
Slot 2 # showvlan 2
```

Vlan 2 Port Map

(- =None, M=Tagged, U=Untagged)

```
-----
| Port Number | 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
|             | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
```

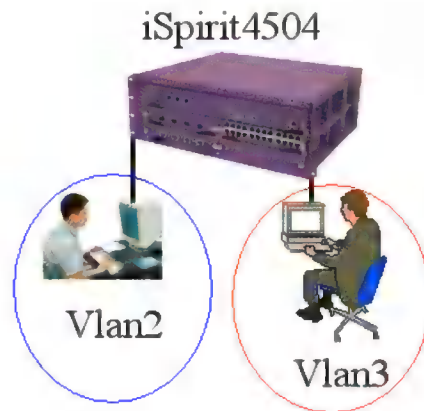


```

vlan 2 4GT 2/1 2/2 24TX 1 2  vlan 3 4GT 2/3 2/4 24TX 3 4
vlan 2 172.20.1.1 255.255.255.0
vlan 3 192.168.1.1 255.255.255.0

```

□ □ □ □ □



2) □ □ □ □

2.1) 4) □ □ □ □

1) □ □ vlan

```
Switch# vlan 2 // 创建 vlan 2
```

```
Vlan 2 added
```

```
Switch(vlan 2) # exit
```

```
Switch# vlan 3 // 创建 vlan 3
```

```
Vlan 3 added
```

```
Switch(vlan 3) # vlan 2 // 将 vlan 2 的所有接口都加入 vlan 2
```

```
 vlan 2 接口
```

```
Switch(vlan 2) # untag 2/1 2/2 // 将 2/1 2/2 接口加入 vlan 2
```

```
Switch(vlan 2) # vlan 3 // 将 vlan 3 的所有接口都加入 vlan 3
```

```
Switch(vlan 3) # untag 2/3 3/4 // 将 2/3 2/4 接口加入 vlan 3
```

2) □ □ □ □ □ VLAN

Switch# show vl an

```
| MD | Name | Status |  
| ---+-----+-----+ |  
| 1 | Default VLAN1 | Static |  
| -----+-----+-----+ |  
| 2 | vlan2 | Static |  
| -----+-----+-----+ |  
| 3 | vlan3 | Static |  
| -----+-----+-----+ |  
  
// □□□□□□□□□□ □□ □□ □□ □□ □□ □□ □□ □□ □□
```

3)  VLAN  "U"

```
Switch# show vlan 2 // 2 2 2
```

## Man 2 Port Map

(- =None, M=Tagged, U=Untagged)

```
|-----|  
| module |      1      |      2      |      3      |  
|-----+++++++|  
|   port | - | - | - | U | U | - | - | - | M | M |  
|-----|  
  
// 00 vlan 2 00000 2/1 2/2 000 " U00000000 00 U00  
0000000000000000000000000000000000000000
```

Switch# show vl an 3

### Man 3 Port Map

(- =None, M=Tagged, U=Untagged)

module	1	2	3
--------	---	---	---

```
|-----+++++|
| port | - | - | - | - | - | U | U | - | - | M | M |
|-----|

//   vlan 3   2/3  2/4   " U   U
                                
```

2.2   24

1)  $\square \square$  v l an

```
Switch# slot 3 // 24
slot 3
Switch(slot-3)# config // config 24
Slot 3 >
Slot 3 > enable // enable 24
password: //
Slot 3 # //

Slot 3 # vlan 2 // vlan2
Vlan 2 added
Slot 3 (vlan-2)# un 1 2 // 24 1 2 vlan2 24
4G
Slot 3 (vlan-2)# vlan 3 // vlan3
Vlan 3 added
Slot 3 (vlan-3)# un 2 4 // 24 2 4 vlan3
```

2) □ □ □ □ □ □ □ VLAN

```
Slot 3 (vl an-3) # exit
Slot 3 #
Slot 3 # show vl an
```

VID	Name	Status
1	Default VLAN 1	Static



[illegible]

| Configuration | U U -

Configuration - - **UU** - - - - -

// 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041

□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □

```
□ □ □ □ vl an□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ no □
□ □ □ □ □ □ □ 1/4□ □ □ vl an2□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □
Switch(vl an-2) # no un 1/4
```

```
□ □ □ □ □ vl an 2□ □ □ □ □ □ □ □ Switch#no vl an 2
```

## 2.3 □ □ □ □ ip

```
□ □ □ vl an□ □ □ □ □ □ □ □ □ □ ip□ □ □ □ □ vl an□ □ □ □ ip□ □ □ □ □ □ □ □ □ □
□ □ □ □ □
```

1) □ □ vl an2□ vl an3□ □ □ ip

```
Switch#int vl an 2
Switch(interface-vl an2) #ip add 172. 20. 1. 1 255. 255. 255. 0
Switch(interface-vl an2) #int vl an 3
Switch(interface-vl an3) #ip add 192. 168. 1. 1 255. 255. 255. 0
Switch(interface-vl an3) #exit
```

2) □ □ □ □ □ □

```
Switch# showint vl an 2
```

```
*****
vl an 2 i nterface
IP address:      172. 20. 1. 1
netMsk:          255. 255. 255. 0
Status:          Active
*****
```

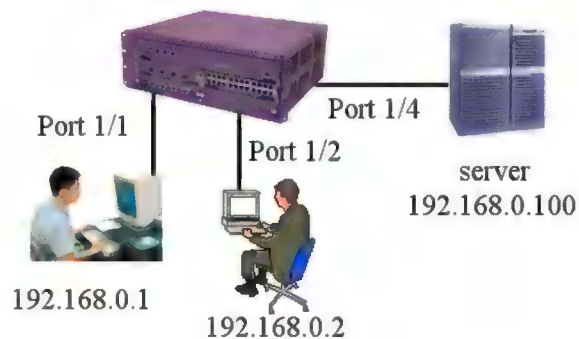
```
Switch# showint vl an 3
```

```
*****
vlan 3 interface
IP address:      192.168.1.1
netMask:         255.255.255.0
Status:          Active
*****
```

□ □ □ □ vlan □ □

## 1. □ □ □ □

3 □ □ □ □ □ □ □ □ □ □ i Spirit 4504 □ 1 □ 2 □ 4 □ □ □ □ □ □ 4 □ □ □ □ □ □ □  
 □ □ □ □ □ PC1 □ PC2 □ □ □ □ □ 4 □ □ □ □ □ □ □ □ □ □ PC1 □ PC2 □ □ □ □ □ □ □ □ □ □  
 □ □ □ □ □



## 2. □ □ □ □

### 2.1 □ 4 □ □ □ □ □ □ □ □

```
Switch# private 1 // □ □ □ □ vlan □ 1
//□ □ □
i Spirit 4504 □ □ □ □ 12 □ □ □ □ vlan □ □ □ □ □ 1~12
Switch(private vlan 1) # vlan 2 4 2 //□ □ □ □ vlan □ □ □ □
```

```
Switch(privatevlan-1)# isolate 1/1 1/2 // 
```

```
Switch(privatevlan-1)# promiscuous 1/4 // 
```

```
Switch(privatevlan-1)# enable //  vlan
```

```
Switch# show pri 1 //  vlan 1 
```

```
Private vlan group : 1
```

```
status : active
```

```
//  active  “ enable”  witch(privatevlan-1)# enable
```

```
max vlan number : 4
```

```
min vlan number : 2
```

```
primary vlan number : 2
```

```
promiscuit port : 1/4
```

```
isolatePort port : 1/1 1/2
```

2.2 24 24

```
Switch# slot 2 //  24  24
```

```
slot  2
```

```
 3
```

```
Switch(slot-2)# config //  config  24
```

```
Slot 2 >
```

```
Slot 2 > enable //  enable  24
```

```
password: // 
```

```
Slot 2 # //  24
```

```
 4
```

```
24  4  vlan 4  vlan
```

```
// 
```



- 3) `max-vlanid` 0 0 `min-vlanid` 0 0 12 0 0 4 0 0 0 0 0 26 0 0 24 1X 0 0 0
- 4) `min-vlanid` 0 0 `max-vlanid` 0 `VLAN` 0 0 0 0 0 `VLAN` 0 0 `VLAN` 0 0
- 5) 0 0 `VLAN` 0 0 0 0 0 0 `VLAN` 0 0 `VLAN` 0 0 0 0 0 0 0 0
- 6) 0 0 0 0 `VLAN` 0 0 0 0 0 `active` 0 0 0 0 0 0 0 0 0 `vlan` 0 0 0 0 0
- 7) 0 0 `VLAN` 0 0 0 `vlan` 0 0 0 0 0 0 0 0 0 `vlan` 0 0 0 0 0 0 0 0 + 0 0 0 0 0 0  
+1
- 8) 0 0 `VLAN` 0 0 0 0 0 0 0 0
- 9) 0 0 `VLAN` 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
- 10) 0 0 `VLAN` 0
- 11) 0 0 `VLAN` 0 0 0 0 0 0 `VLAN` 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
- 12) 0 0 0 `VLAN` 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 `VLAN` `untagged` 0 0 0 0  
0 0 0 `VLAN` 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 `VLAN` 0 0

## 1.4

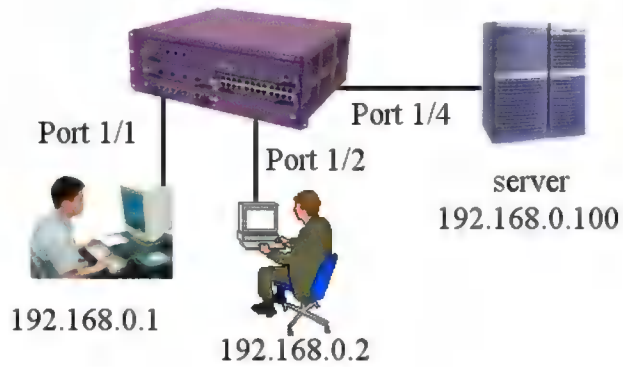
0 0 `VLAN` 0 0 0 0 0

	0 0 0 0	0 1 0 0 0 0	0 2 0 0 0 0	0 0 0 0
0 0 0 0	0 0	0 0	0 0	0 0
0 1 0 0 0 0	0 0	0 0		
0 2 0 0 0 0	0 0		0 0	
0 0 0 0	0 0			

0 0 `Vlan` 0 0 0 0 0 0 0

## 1.0 0 0 0

0 0 0 0 0 0 0 0 `vlan` 0 0 0 0 0 `vlan1` 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  
0 0 0 0 `vlan` 0 0 0 0 0 0 0 0 0 0 0 0 0 0 (0 0 0 0 0 0 0 0 1/1 1/2) 0 0 0 0  
0 0 0 0 0 0 0 0 0 0 0 0 1/4 0 0 0 0 0 0 0 0 0 0 `vlan` 0 0 0 0 0 0 0 0  
0 0 0 0



## 2. □ □ □ □

### 2.1 □ 4□ □ □ □ □ □ □ □

1) □ □ □ 1□ 2□ □ □ □ □ □ □ □ □ □ □ □ □ □ 4□ □ □ □ □ □ □

```
Switch# port 1/1
```

```
Switch(port 1/1) # separated 1/4
```

```
Switch(port 1/1) # port 1/2
```

```
Switch(port 1/2) # separated 1/4
```

2) □ □ □ □ □ □

```
Switch# show separated
```

Port	Egress Port	Status
1/1	1/4	Separated
1/2	1/4	Separated
1/3	NA	unSeparated
1/4	NA	unSeparated

### 2.2 □ 24□ □ □ □ □ □ □ □

```
Switch# slot 2 //□ □ 24□ □ □ □ □ □ □ □ □ □ 24□ □ □ □ □ □ □ □ □ □ □ □
□ □ slot □ □ □ □ □ □ □ □ 2□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ 3□
Switch(slot-2) # config //□ □ config□ □ 24□ □ □ □ □ □ □ □
Slot 2 >
```

```
Slot 2 > enable // enable 24
password: //
Slot 2 # // 24
```

```
4
```

```
Switch# show separated
```

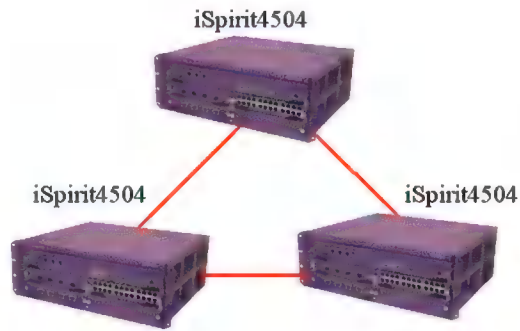
Port	Egress Port	Status
1	4	Separated
2	4	Separated
3	NA	unSeparated
4	NA	unSeparated
5	NA	unSeparated
6	NA	unSeparated
7	NA	unSeparated
8	NA	unSeparated
9	NA	unSeparated
10	NA	unSeparated
11	NA	unSeparated
12	NA	unSeparated
13	NA	unSeparated
14	NA	unSeparated
15	NA	unSeparated

```
SIP
```

1.

```
iSpirit4504 SIP
```





## 2. 配置

1) 配置交换机 stp

```
Switch#stp enable
Switch#stp enable
```

2) 配置交换机

```
Switch#show switch
```

```

Ip Address       : 192.168.0.1
Subnet Mask      : 255.255.255.0
Default Gateway  : 0.0.0.0
MAC Address      : 00:09:ca:13:4e:00
Spanning Tree    : Enable
IGMP Snooping    : Disable
DhcpRelay        : Disable
Rip              : Disable
  
```

```
Switch#show spanning-tree enable
```

```
Switch#no stp
```

```
Switch#show spanning-tree
```

```
Switch#show spanning-tree
```

32768

Switch# stp bridge priority A stp bridge priority (0<A<65535)

stp stp  
.

Switch# disable stp ports portnumber

stp

Switch# enable stp ports portnumber

### 3.

1)

Switch# show stp bridge

--- Designated Root Information ---

Priority : 32768  
MAC Address : 00: 09: ca: 13: 4e: 00  
Hello Time : 2s  
Forward Delay : 15s  
Max Age : 20s

--- Bridge STP Information ---

Bridge Priority : 32768  
MAC Address : 00: 09: ca: 13: 4e: 00  
Root Path Cost : 0  
Root Port : 0  
Bridge Hello Time : 2s  
Bridge Forward Delay : 15s  
Bridge Max Age : 20s

2)

Switch# show stp port 1/1

--- Port Information ---

Module/Port : 1/1  
SIP Port : Enable  
Port ID : 6  
Priority : 128  
State : Disabled  
Path Cost : 4  
Designated Cost : 0

--- Designated Root Information ---

Priority : 32768  
MAC Address : 00:09:ca:13:4e:00

--- Designated Port Information ---

Port ID : 6  
Priority : 128

--- Designated Bridge Information ---

Priority : 32768  
MAC Address : 00:09:ca:13:4e:00

//

Trunk

1.

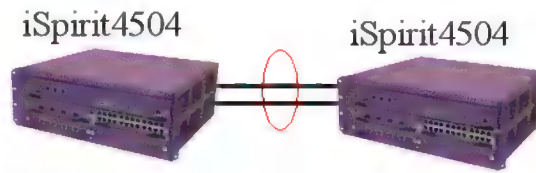
iSpirit4504

trunk

```

0000 10000 2000 trunk00000000 1/1 1/2 1/300000000

```



2. ☐ ☐ ☐ ☐

trunk 1, 1 1/1-3

Switch#trunk config 1 1 1/1-3

□ □ □ □ □ □ □ □ □ □

Switch# trunk config ?

```
A      trunk Id: (0<=A<=28)  //  trunk  id  0-28
```

```
Switch# trunk config 1 ?
```

```
A      trunk_Rtag: (1<=A<=6)  // 0 0 trunk 0 0 0 0 0 0 6 0 0 0 0 0
```

□ □ 1-6

```
Switch#trunk config 1 1 ?
```

MP                    modul e/ port ( 1 $\leftarrow$ p $\leftarrow$ 4) ( 1 $\leftarrow$ m $\leftarrow$ 3)

Mp1- p2	Module/ port min- port max( 1 $\Leftarrow$ p1, p2 $\Leftarrow$ 4)
1-1	1
1-2	2
1-3	3
1-4	4
2-1	1
2-2	2
2-3	3
2-4	4
3-1	1
3-2	2
3-3	3
3-4	4
4-1	1
4-2	2
4-3	3
4-4	4

//00:

```

    trunk

```

000000 40000000000000 240000000000 24000000  
0000000000

### 3. Trunk □ □ □ □

□ □ □ □ trunk □

Switch# no trunk ?

A trunk Id(0 $\Leftarrow$ A $\Leftarrow$ 28)

## 4. 配置

1) 配置 trunk 接口，将接口配置为 trunk 接口，并配置 trunk 接口

```
Switch# show trunk
```

TGID	RTAG	status	Ports
1	1	Active	1/1-1/3

2) 配置 trunk 接口，将接口配置为 trunk 接口，并配置 trunk 接口

## 5. Mirror 配置

### 1. 配置

配置 Mirror 功能，将接口配置为 Mirror 接口，并配置 Mirror 接口

配置 Mirror 功能，将接口配置为 Mirror 接口，并配置 Mirror 接口

配置 Mirror 功能，将接口配置为 Mirror 接口，并配置 Mirror 接口



### 2. 配置

2.1 配置 4 个接口

```
Switch# mirror port 1/4 //配置 4 个接口
```

```
Switch# mirror egress 1/1-2 // 0 0 0 0 0 0 0 0 0 0
```

```
Switch# mirror ingress 1/1-2 // 0 0 0 0 0 0 0 0 0 0
```

```
> show mirror 0 0 0 0 0 0
```

```
Switch# show mirror
```

```
Mode : L2
```

```
mirror Port : 1/4
```

```
egressPortList : 1/1-1/2
```

```
ingressPortList : 1/1-1/2
```

2.2 0 24 0 0 0 0 0 0 0 0

```
Slot 1 # mirror
```

```
Mirror Port: 4
```

```
Egress ports_list: 1-2
```

```
Ingress ports_list: 1-2
```

```
// 0 0 0 24 0 0 0 0 0 0 mirror 0 0 0 0 0 0 0 0 0 0 4 0 0 0 0 0 0 0 0
```

```
> show mirror 0 0 0 0 0 0
```

```
Slot 1 # show mirror
```

```
Mirror Mode: L2
```

```
Mirror Port: 24
```

```
Egress ports_list: 1-2
```

```
Ingress ports_list: 1-2
```

### 3. 0 0

1) 0 0 0 0 0 0 0 0 0 0 0 0 0 0

0 0 0 0 0 mirror ports, 0 0 0 0 0 0 0 0 0 0

0 0 0 0 0 Egress ports 0 0 0 0 0 0 , Ingress ports 0 0 0 0 0 0 , 0 0 0

0 0 0 0 0 0

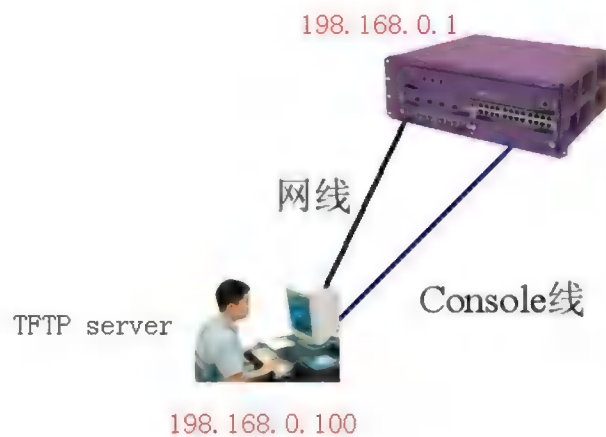
## 配置 Configuration

### 1. 准备工作

1) 准备好 TFTP 服务器

2) 准备好 TFTP 服务器和交换机的连接

网络拓扑图



### 2. 配置步骤

配置交换机

配置 TFTP 服务器

在 windows 上使用 TFTP 服务器 tftpd32.exe 启动 tftp 服务

1) 配置 TFTP 服务器 IP 为 192.168.0.100, i Spirit 4504 交换机 IP 为 192.168.0.1,

配置 TFTP 服务器 IP 为 192.168.0.100

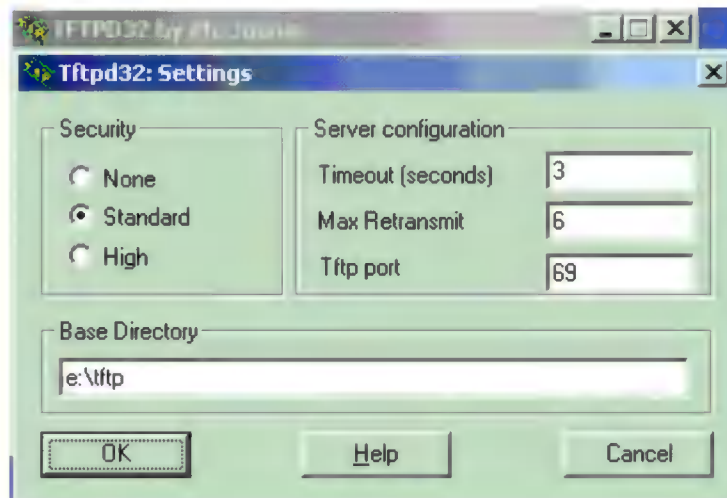
配置 ip 地址

switch>enable

switch#ip add 192.168.0.1 255.255.255.0 //配置交换机 IP 地址

配置 TFTP 服务器

2) 配置 pc 的 ip 为 192.168.0.100 启动 tftp 服务



e:\tftp e:\tftp  
 e:\tftp

3) TFTP

Switch# upload configuration 192.168.0.100

uploading configuration .....

4) TFTP

Switch# download configuration 192.168.0.100

Do you wish to continue? [Y/N]: y

//  
 192.168.0.1 24  
 24  
 ip 192.168.0.2 ip 192.168.0.3

### 3.

1) tftp IP

2) tftp tftp

3)



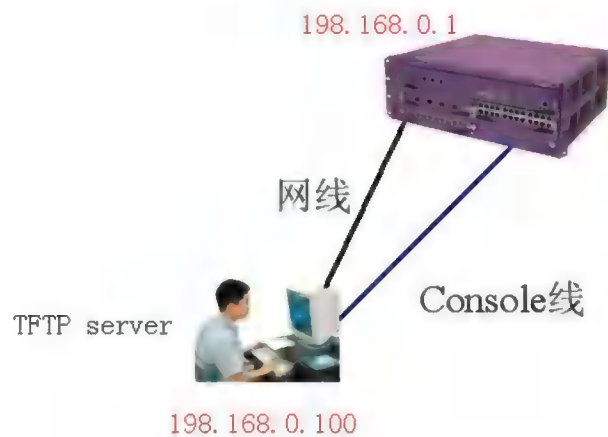
配置交换机  
配置 tftp 服务器

配置 IMAGE

## 1. 配置

配置交换机

在 windows 上运行 TFTP 服务器 tftpd32.exe 启动 tftp 服务



## 2. 配置

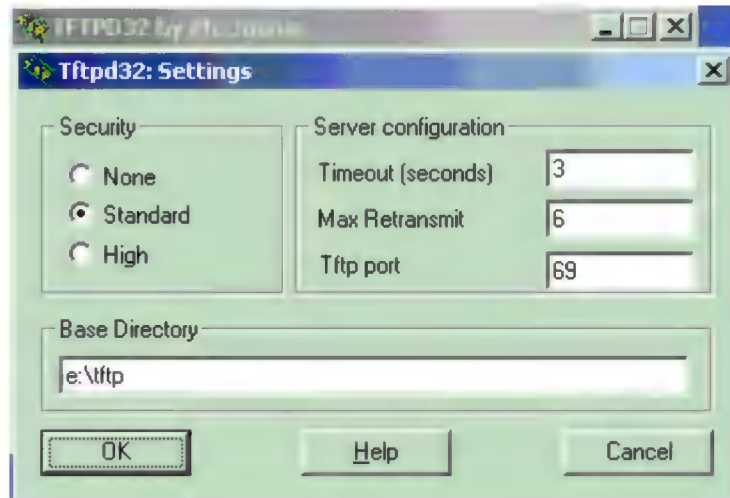
1) 配置 ip

```
Switch>enable
```

```
Switch#ip add 192.168.0.1 255.255.255.0 //配置 ip 地址
```

```
Switch#show switch //查看 ip
```

2) 配置 pc ip 192.168.0.100 启动 tftp 服务



e:\tftp e:\tftp

3) download

Switch# download image 192.168.0.100 i Spirit30261V12.img

Do you wish to continue? [Y/N]: y

Don't Shut down power until completed!

downloading image .....

//

192.168.0.1 24 24

24 ip

192.168.0.2 ip 192.168.0.3

bootrom i Spirit4504bootrom

### 3. 配置

配置步骤如下：

- 1) 配置 TFTP 服务器的 IP 地址
- 2) TFTP 服务器的 IP 地址配置完成后，PING 测试
- 3) 配置 TFTP 服务器的社区名
- 4) 配置 TFTP 服务器的社区名

### 配置 snmp 配置

#### 1. 配置 IP

配置 SNMP 服务器的 IP 地址为 192.168.0.100，配置 IP 地址为 192.168.0.1 的 PC 可以访问该 IP 地址，配置 SNMP 服务器的社区名为 public，配置 SNMP 服务器的社区名为 private。



#### 3. 配置 IP

1) 配置 iSpirit4504 的 snmp 配置，配置 snmp 配置，配置 snmp community 配置。

```
//配置 public 社区名
```

```
Switch# snmp community  
Community Name : public
```

Permission : 1 // 1 0 0 0 0 0 0 0 0 0

```
// community private
```

Permissi on : 2 // □ □ 2 □ □ □ □ □ □ □ □ □

```
snmp community
```

Switch# show snmp community

CommunityName	ViewName	Permission	Status
public	internet	ReadOnly	Active
private	internet	ReadWrite	Active

[illegible]

2) `snmp trap`

[illegible]

```
trap -srm 2
```

Switch# snmp trap

```
trap name : test
```

Target Ip Addr: 192.168.0.100

$$\text{snmpv1}(1), \text{snmpv2}(2), \text{snmpv3}(3)$$

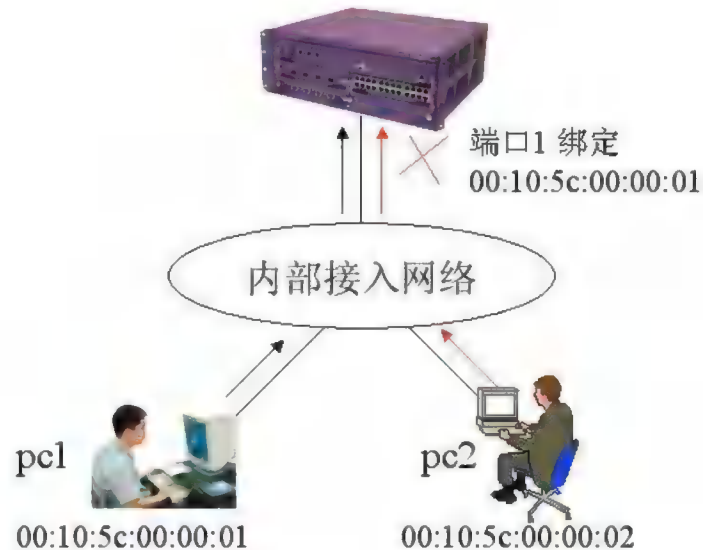
Versi on : 2



## 配置 MAC 地址

### 1. 配置

配置接口 1 的 MAC 地址为 i Spirit4504 的 MAC 地址 00:10:5c:00:00:01



### 3. 配置

#### 3.1 配置 4 个接口

1) 配置 MAC 地址 1

```
Switch# mac bind 1/1 1 00:10:5c:00:00:01 // 1/1 1 00:10:5c:00:00:01 1 vlan
```

2) 配置 MAC 地址

```
Switch# show mac bind
```

Module/port	VLAN	macAddress	STATUS
1/1	1	00:10:5c:00:00:01	Active

#### 3.2 配置 24 个接口

1) 配置 24 个接口

2) 配置 4 个接口

//

```
    nac 00:10:5c:00:00:01 1 1 nac
vlan1 iSpirit4504 vlan
    nac 00:10:5c:00:00:01 1 00:10:5c:00:00:01
    1 00:10:5c:00:00:01 00:10:5c:00:00:01 00:10:5c:00:00:01
    ISpirit4504 128
    nac
```

```
Mac 00:10:5c:00:00:01 00:10:5c:00:00:01 00:10:5c:00:00:01
00:10:5c:00:00:01 00:10:5c:00:00:01 00:10:5c:00:00:01
00:10:5c:00:00:01 00:10:5c:00:00:01 00:10:5c:00:00:01
00:10:5c:00:00:01 128 00:10:5c:00:00:01 128
00:10:5c:00:00:01 00:10:5c:00:00:01 00:10:5c:00:00:01
00:10:5c:00:00:01 00:10:5c:00:00:01 00:10:5c:00:00:01
00:10:5c:00:00:01 00:10:5c:00:00:01 00:10:5c:00:00:01
00:10:5c:00:00:01 00:10:5c:00:00:01 00:10:5c:00:00:01
```

#### 4.

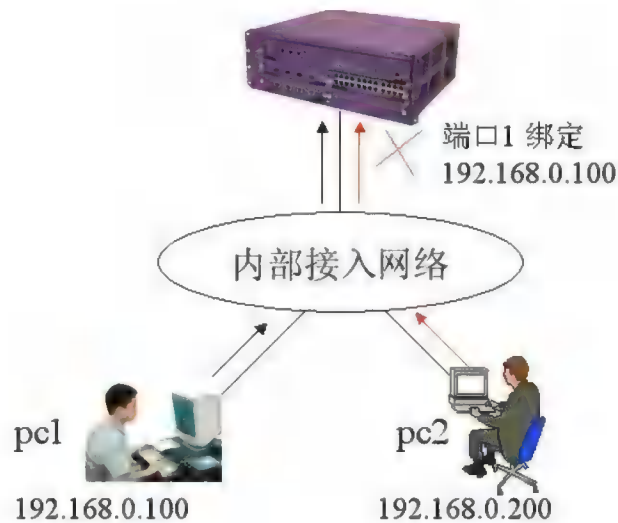
1) nac 00:10:5c:00:00:01 00:10:5c:00:00:01 00:10:5c:00:00:01

2) nac 00:10:5c:00:00:01 00:10:5c:00:00:01 00:10:5c:00:00:01

#### IP

##### 1.

ip 192.168.0.100 1



## 2. 配置

1) 配置 ip 192.168.0.100 绑定 1

Switch#ip bind 1/1 192.168.0.100 // "1/1" 绑定 mac 地址  
绑定 vlan

2) 配置 1 ip

show ip bind 1

module/port	ipAddress	macAddress
1/1	192.168.0.100	00:00:00:00:00:00

配置 24 个 IP 地址 24 个 MAC 地址 4 个 VLAN

//

配置 1/1 ip 192.168.0.100 绑定 1/1  
ip 192.168.0.100

Ip mac 绑定 ip 绑定  
A 绑定 ip B 绑定 ip A 绑定 ip  
B 绑定 ip 127 ip



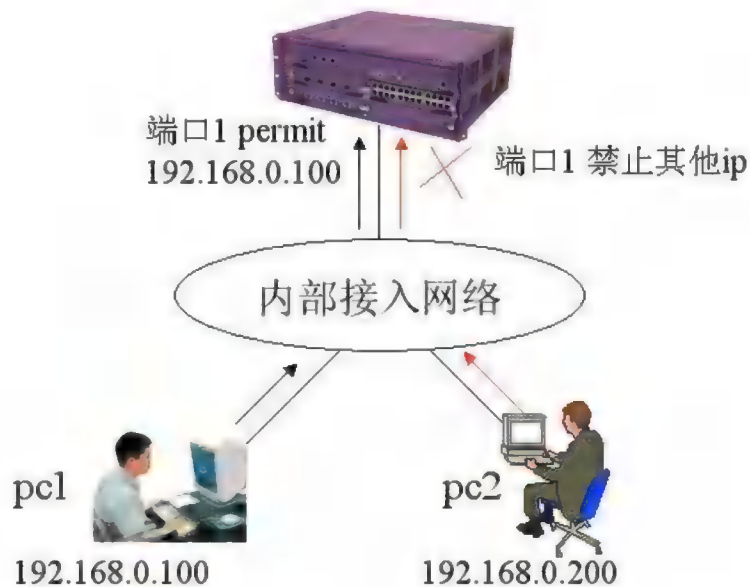
3. ☐ ☐

- 1)  $\text{ip} \rightarrow \text{ip}$
- 2)  $\text{ip} \rightarrow \text{ip}$
- i Spirit 4504

□ □ . ACL □ □ □ □ □ □ □ □

## 1. IP ACL

- 1) □□□□□□□□□□ 1□□□□ ip□□□ 192.168.0.100□ pc□□□□□ ip□  
□□ pc□□□□□□□□ 1□□□ ip□□□ 192.168.0.100□ pc□□□□□□□□□□□□  
□□□□ 1□□□□ ip□□□□ pc□□□□□□□□□□□□□□□□□□□□□□ 1□□□



- 2) ☐ ☐ ☐

```
A > Switch# access-list 1 permit host 192.168.0.100
```

```
//deny any traffic to 128.0.0.0/1
access-list 1 permit host 192.168.0.100
access-list 1 permit host 192.168.0.123
```

```

ip access-list 1 192.168.0.100 deny any
Switch# port 1/1
Switch(port 1/1)# acl-filter 1
//acl 1 192.168.0.100 deny any
//acl 1 192.168.0.100 deny any
24 192.168.0.100 24 192.168.0.100 4 192.168.0.100 100
10 20 192.168.0.100
slot 2# port 10-20
slot 2(port 10-20)# acl-filter 100
3)
192.168.0.100 IP show
access-list deny
any permit any
Switch# show acl-filter
ACL group and Port Configuration Information
module/port      groupId      status
1/1              1            Active
Switch# show access-list 1
R - RuleId, SI - Source Ip address, DI - Destination Ip address, IT - Ip Type
SP - Source Port, DP - Destination Port, PT - Protocol Type
SM- Source MAC address, DM- Destination MAC address, V - VlanId, ST - Status.
Standard IP access list:
  GroupId 1 :   reference count(1)
R 1  permit SI 192.168.0.100 Active
//acl 1 192.168.0.100 host 192.168.0.100
//acl permit 192.168.0.100
Switch# access 1 permit ? //acl access 1 permit deny " "

```

acl 200 1

ABCD Source address

```
// 192.168.1.0 255.255.255.0 access 1 permit
```

any Any host

```
// any access 1 permit any
```

host A single host address

```
// host 192.168.1.1 access 1 permit host 192.168.1.1
```

## 2. IP acl web



1) 192.168.0.1

192.168.0.100 4 192.168.0.1~192.168.0.2 1~2 web

2) 192.168.0.1

A 192.168.0.100 4 192.168.0.1~192.168.0.2 1~2 web

```
Switch# access 200 permit tcp 192.168.0.1 0.0.0.255 host 192.168.0.100 www
```

```
// ip 200 399
```

```
B 200 1 2
```

```
Switch# port 1
```

```
Switch(port 1)# acl-filter 200
```

```
Switch# port 2
```

```
Switch(port 1)# acl-filter 200
```

```
24 24
```

3)

```
A
```

```
deny any permit any
```

```
B show access-list / access
```

```
Switch# show acl-filter
```

ACL group and Port Configuration Information

module/port	groupId	status
1/1	200	Active
1/2	200	Active

```
Switch# show access
```

R - RuleId, SI - Source Ip address, DI - Destination Ip address, IT - Ip Type

SP - Source Port, DP - Destination Port, PT - Protocol Type

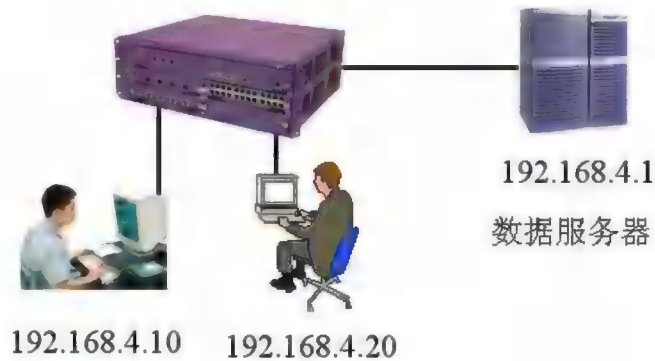
SM- Source MAC address, DM- Destination MAC address, V - VlanId, ST - Status.

Extended IP access list:

GroupId 200 : reference count(0)

```
R 1 permit tcp SI 192.168.0.0 0.0.0.255 DI 192.168.0.100 www Active
```

### 3. IP ACL IMP



1)

```

000000000000000000000000 PING00000000
00000000 PING0000000000000000 ICM0000000000000000
000000000000000000000000 ICM000000000000 ICM0000
000

```

2) ☐ ☐ ☐ ☐ ☐

```
Switch# access-list 300 deny icmp host 192.168.4.1 any echo-reply
Switch# access-list 300 permit ip any any
```

port 1 / 1

```
Switch# port 1/1
Switch(port 1/1)# acl-filter 300
Switch# show access-list 300
```

R- RuleId, SI - Source Ip address, DI - Destination Ip address, IT - Ip Type  
 SP - Source Port, DP - Destination Port, PT - Protocol Type  
 SM- Source MAC address, DM- Destination MAC address, V - VlanId, ST - Status.

Extended IP access list:

GroupId 300 : reference count(1)

R1 deny icmp 192.168.4.1 255.255.255.255 any echo-reply Active

R2 permit ip any 255.255.255.255 any Active

Switch# show acl-filter

ACL group and Port Configuration Information

port	groupId	status
1/1	300	Active

#### 4. 配置 IP 地址为 192.168.4.1 的 PC 禁止发起 TCP 连接



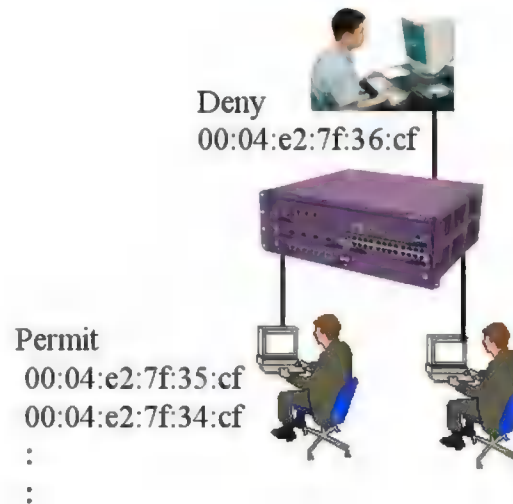
1) 配置 ACL

```
Switch# access-list 200 deny tcp 192.168.4.1 255.255.255.255 any 0 syn 1 ack 0
Switch# access-list 200 permit ip any any
Switch# show access-lists
200 deny tcp 192.168.4.1 255.255.255.255 any 0 syn 1 ack 0
200 permit ip any any
```

2) 配置端口

```
Switch# access-list 200 deny tcp any any 0 syn 1 ack 0
Switch# access-list 200 permit ip any any
```





2) □ □ □ □ □

A. □ □ □ □ □ □ □

Switch# access-list 400 deny 0 ip 00: 04: e2: 7f: 36: cf //□ □ □ 0□ □ □ □ vlan□

Ip□ □ □ □ □

Switch# access-list 400 permit 0 ip any //0□ ip□ □ □ □ □ □ □ □

□ □ Any□ □ □ □ mac

B □ □ □ □ □ □ □ □ □ iSpirit4504□ 1/1□ □ □ □ □ □ □ □ □ □ □ □

Switch# port 1/1

Switch(port 1/1)# acl-filter 400

C □ □ □ □ □ □

Switch# show acl-filter

ACL group and Port Configuration Information

module/port	groupId	status
1/1	400	Active

Switch# show access-list 400

R - RuleId, SI - Source Ip address, DI - Destination Ip address, IT - Ip Type

SP - Source Port, DP - Destination Port, PT - Protocol Type



SM- Source MAC address, DM- Destination MAC address, V - VlanId, ST - Status.

MAC address list:

GroupId 400 : reference count(0)

R 1 deny ip SM00: 04: e2: 7f: 36: cf DMany Active

R 2 permit ip SMany DMany Active

3)

ip

show access-list

mac

deny any permit any

// acl 4 24

acl 24 acl

. 802.1x

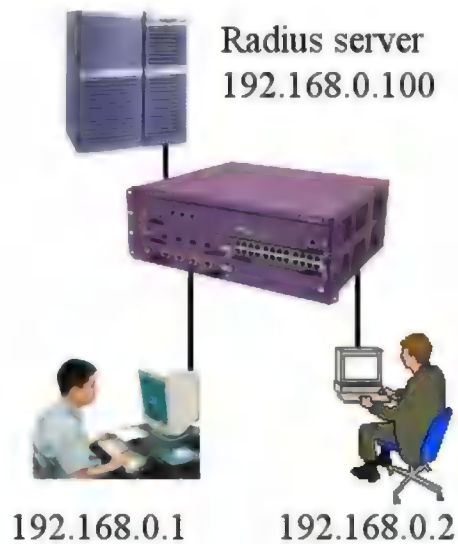
1.

iSpirit4504 radius ip 192.168.0.100

255.255.255.0 ip 192.168.0.1 192.168.0.3 255.255.255.0

iSpirit4504 802.1x

pc 802.1x radius



## 2. 配置

1) 配置 802.1x

```
Switch# dot1x
```

2) 配置 802.1x 控制 1/1 1/1

```
Switch# dot1x control auto 1/1 // 1/1
```

```
802.1x
```

3) 配置 radius ip

```
Switch# radius-server host 192.168.0.100
```

4) 配置 radius 密钥

```
Switch# radius-server key radiuslenovonetworks
```

5) 配置 802.1x

```
Switch# show dot1x
```

Global 802.1X Parameters

Dot1x Status : Enable // 802.x

ReAuth-enabled : no

Accounting-enabled : yes

```

ReAuth-period      :      3600
Quiet-period       :      60
Tx-period          :      30
Server-timeout     :      10
Max-req            :      3
reAuthMax          :      3

```

## 802.1X Port Summary

PortName	Status	Mode	HostNum
1/1	Link Down	auto	100
1/2	Link Down	n/a	100
1/3	Link Down	n/a	100

1/1

Switch# show dot 1x 1

```

Port-control       : auto
Maximum hosts      : 250
Current Connecting hosts : 0

```

radius

Switch# show radius-server

```

PrimaryServerIp    : 192.168.0.100
OptionServerIp     : 0.0.0.0
UdpPort            : 1812
accountingPort      : 1813
ShareKey           : radiuslenovonetworks
Vendor             :
NasPort            : 0xc353
NasPort Type       : 0x0f
NasPort Server     : 0x02

```

```
// 24 802.1x, 24

```

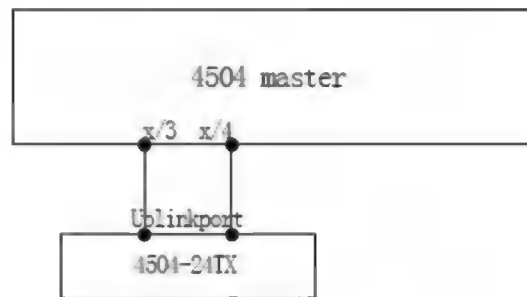
### 3. □ □

- 1) `show dot1x`
- 2) `show dot1x`
- 3) `show radius-server`

1

[illegible]

百兆模块和 4504 主控板的结构如下图:



### 4504-24TX 结构图

```

    iSpirit4504 VLAN
igm snooping

```

```

000000000000000000000000000000000000 IP00000000
000000000000 show000000000000000000 IP00000000
0000 IP000 IP00000000000000000000000000000000 IP0000

```

```

      0000000000 IP 00000000 TELNET 00000000000000000000
      000000000000000000000000000000000000000000000000000

```

TELNET WEB SNMP

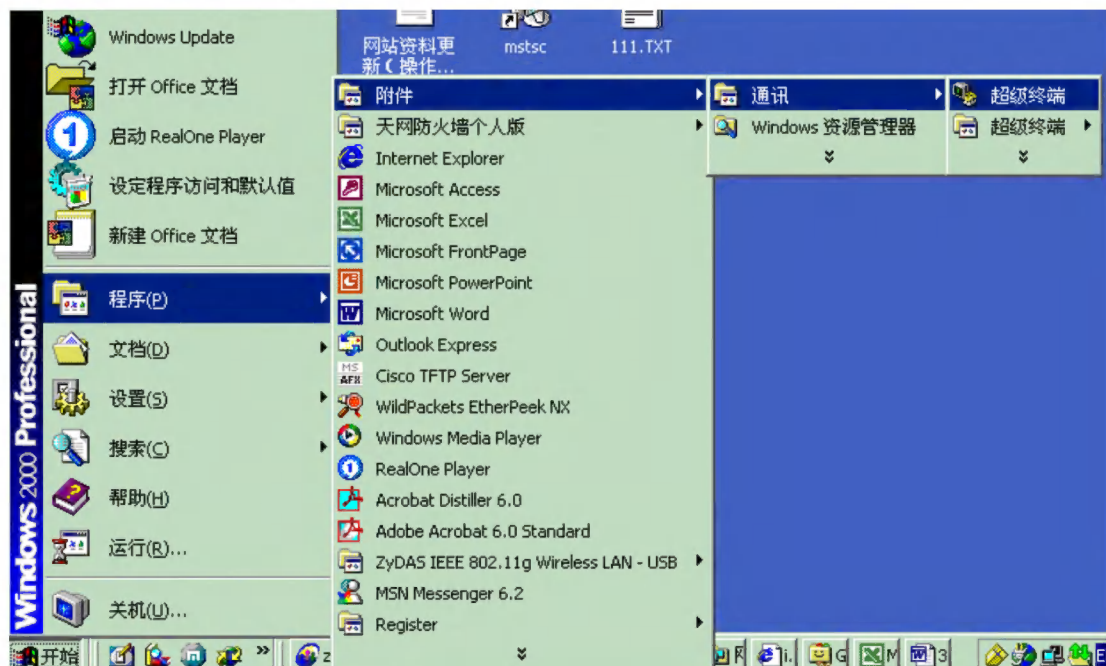
□□□□□□□□□□

□□□□□□□□□ 3□□□□□□□□□□ slot 3□□□□□□ 3□□□□□□

□□□□□□□□□□□□□□□□ IP□□□□□□□□□ IP□□□□□□□□□

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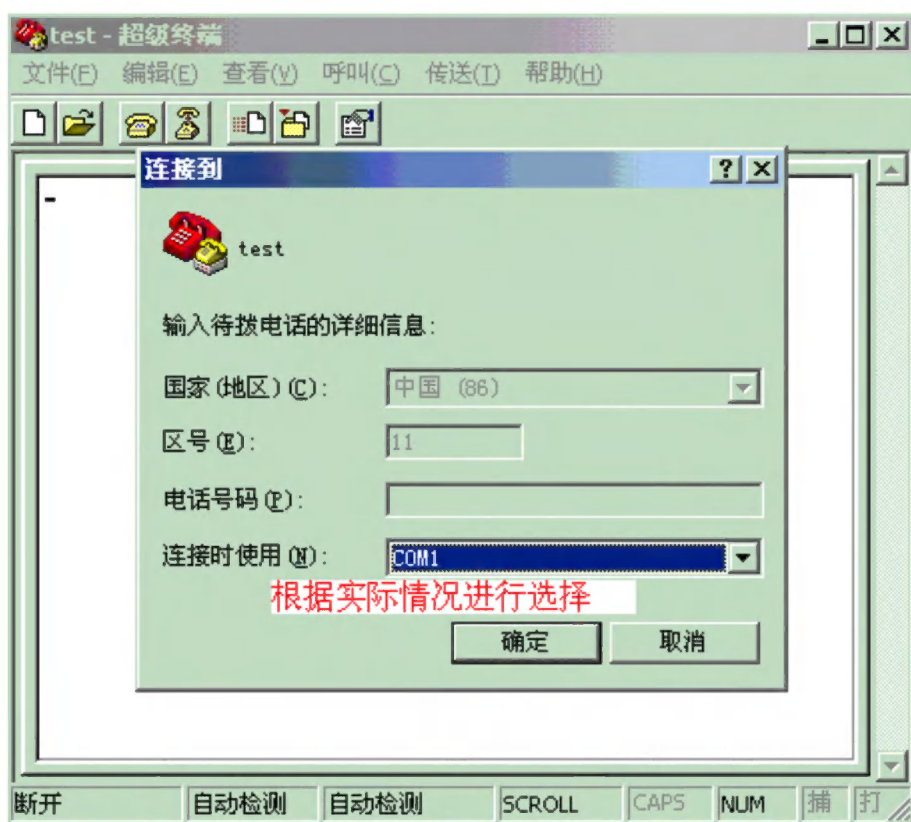
2)         1



3)  $\square \square 2 \square 3, 4 \square \square \square \square \square \square$



□ 2



□ 3



4) □□□□□□□□□□□□□□ □□□□□